CLAIMS

Please amend the claims as shown in the following listing of claims, which replaces all prior versions and listings of claims in the present application:

1. (Currently amended) An electrostatic chuck capable of attachment to a pedestal in a process chamber, the chuck comprising:

(a) an electrostatic puck comprising a ceramic body with an embedded electrode, the ceramic body having a substrate support surface with an annular periphery; and

(b) a base plate below the electrostatic puck, the base plate having an annular flange extending beyond the periphery of the ceramic body, the annular flange comprising a plurality of holes to allow connectors to pass therethrough, and wherein the base plate comprises a composite of a ceramic material comprising pores that are at least partially filled by a metal.

2. (Cancelled)

3. (Cancelled)

4. (Previously Presented) A chuck according to claim 1 wherein in (b) the ceramic material comprises silicon carbide and the metal comprises aluminum.

5. (Original) A chuck according to claim 4 wherein the volume percentage of aluminum in the composite is from about 20% to about 80%.

6. (Previously Presented) An electrostatic chuck capable of exhibiting reduced thermal expansion mismatch in a process chamber, the chuck comprising:

(a) an electrostatic puck comprising a ceramic body with an embedded electrode, the ceramic body having a substrate support surface and an annular periphery;

(b) a base plate below the electrostatic puck, the base plate having an annular flange extending beyond the annular periphery of the ceramic body, the annular flange comprising a plurality of holes that are shaped and sized to allow connectors to pass therethrough, wherein the base plate comprises a composite comprising a ceramic material comprising pores that are at least partially infiltrated with a metal; and

(c) a support pedestal having a housing and an annular ledge, the annular ledge extending outwardly from the housing, wherein the annular ledge is capable of being attached to the annular flange of the base plate by the connectors.

7. (Previously Presented) A chuck according to claim 6 wherein in (b) the ceramic material comprises silicon carbide and the metal comprises.

8. (Original) A chuck according to claim 6 further comprising a heat transfer plate below the base plate, the heat transfer plate having a heat transfer fluid channel embedded therein.

9. (Original) A chuck according to claim 8 wherein the heat transfer plate comprises an upper portion comprising a first material and a lower portion comprising a second material, and the heat transfer fluid channel being embedded therebetween.

10. (Original) A chuck according to claim 9 wherein the first material comprises copper and the second material comprises stainless steel.

11. (Previously pending) An electrostatic chuck for a process chamber, the chuck comprising:

(a) an electrostatic puck comprising a ceramic body with an embedded electrode, the ceramic body having a substrate support surface and an annular periphery;

(b) a base plate below the electrostatic puck, the base plate having an annular flange extending beyond the annular periphery of the ceramic body, the annular flange comprising a plurality of holes that are shaped and sized to allow connectors to pass therethrough, and the base plate comprising a composite comprising a ceramic material infiltrated with a metal;

(c) a support pedestal having a housing and an annular ledge, the annular ledge extending outwardly from the housing, the annular ledge being capable of being attached to the annular flange of the base by the connectors; and

(d) a heat transfer plate below the base plate, the heat transfer plate having a heat transfer fluid channel comprising first and second spiral channels, the first spiral channel being adapted to provide a flow of fluid therethrough that is substantially opposite a flow of fluid through the second spiral channel.

12. (Original) A chuck according to claim 11 wherein at least one of the first and second spiral channels encircles a center of the heat transfer plate 3 times.

13. (Original) A chuck according to claim 8 further comprising a spring assembly to apply a pressure to the heat transfer plate.

14. (Original) A chuck according to claim 8 further comprising a thermally conductive layer between the heat transfer plate and base plate.

15. (Previously Presented) A chuck according to claim 6 further comprising an aluminum bond layer between the electrostatic puck and the base plate.

16. (Original) A substrate processing chamber comprising the electrostatic chuck of claim 6 and further comprising a gas supply to provide a process gas in the chamber, a gas energizer to energize the gas, and an exhaust to exhaust the gas.

17. (Currently amended) An electrostatic chuck capable of exhibiting reduced thermal expansion mismatch in a process chamber, chuck comprising:

(a) an electrostatic puck comprising a ceramic body with an embedded electrode, the ceramic body having a substrate support surface and an annular periphery;

(b) a base plate below the electrostatic puck, the base plate having an annular flange extending beyond the periphery of the ceramic body, the annular flange comprising a plurality of holes to allow connectors to pass therethrough, and wherein the base plate comprises a composite of a ceramic material comprising pores that are at least partially filled by a metal;

(c) a support pedestal having a housing and an annular ledge, wherein the annular ledge extends outwardly from the housing to attach to the annular flange of the base plate, thereby supporting the base plate and electrostatic puck;

(d) a heat transfer plate below the base plate and at least partially surrounded by the pedestal housing, the heat transfer plate comprising an embedded heat transfer fluid channel; and

(e) a spring assembly at least partially surrounded by the pedestal housing, the spring assembly being biased to press the heat transfer plate against the base plate.

18. (Previously Presented) A chuck according to claim 7 wherein the volume percentage of aluminum in the composite is from about 20% to about 80%.

19. (Previously Presented) A chuck according to claim 11 further comprising a spring assembly to apply a pressure to the heat transfer plate.

20. (Previously Presented) A chuck according to claim 11 further comprising a thermally conductive layer between the heat transfer plate and the base plate.

21. (Previously Presented) A chuck according to claim 11 further comprising an aluminum bond layer between the electrostatic puck layer and base plate.